

CRYONICS INSTITUTE

NEWSLETTER

Cryonics insights and
information for members
and friends of the
Cryonics Institute



CI BULLETIN



Hello Everyone,

It's been a challenging year for all of us with the COVID 19 pandemic, mass protests and other concerning events happening around the world. As the President of an international organization, I consider how these events impact our membership around the globe, particularly in the case of how lockdowns and travel restrictions could impact a patient's transport to CI for their cryopreservation. Rest assured, we are doing all we can to work around any national, regional or local restrictions as needed, but the most integral part of our cryopreservation team will always be you, our local member, who best know their own circumstances, region and laws.

So please take note if you are in poor health or otherwise nearing end of life and eventual cryopreservation. In light of the ever-changing circumstances, this is an excellent time to look into your standby and transport arrangements. It is especially important now to determine if there are any unusual travel, medical or other unique circumstances or temporary restrictions in place due to the pandemic or other events. Even if your arrangements are already in place (and if they are, my personal kudos to you for planning ahead!) it is in your best interest to review and confirm those arrangements in case something has changed. If you haven't made those arrangements, perhaps facing the unprecedented times we are going through will help provide the impetus to

take them more seriously and actively plan for and make the necessary arrangements.

In spite of all that, I would still like to strike a note of optimism here and say whatever difficulties we are facing, I remain certain that we will collectively overcome these setbacks and grow to become a stronger and better world. Regarding the pandemic, I think recent news about the governments, research centers, doctors and scientists everywhere working hard to find solutions is a reason to be hopeful this will be over soon. I realize there are many conflicting reports out there, but I choose to focus on the positives and like everyone else, sincerely hope for a resolution to all this sooner rather than later.

As a cryonicist, I have confidence in the future and am optimistic thinking about the rapid pace of technological advances and what the future holds. I appreciate all the comforts we enjoy today and look forward to what's in store for tomorrow. In many ways, I believe it is fair to say that we are generally spoiled as a society when we step back to consider all that we have now compared to what our ancestors had as little as 50 or 100 years ago. Advances in communications and connectivity come to mind, with the explosion of the internet and internet-enabled devices and applications. Transportation continues to become faster, more convenient and more environmentally-friendly and efficient. Business and industry constantly drive innovation and introduce new products and services to make life better.

But most important, mankind continues to revolutionize healthcare and advance our knowledge of medicine and the human body. Dedicated researchers are constantly finding new ways to fight diseases and ailments. The average life expectancy continues to rise. People worldwide have more access to healthcare and access to cures and procedures undreamt of decades ago. The track record of success makes me wonder "What revolutionary advances are ahead?" rather than worry that our current problems can never be solved.

All these things give me reason to be hopeful rather than

fearful of both the far and near future. I think cryonicists in general are more in tune with technology and futurism and tend to have broader knowledge of scientific progress and potential and therefore have a more positive outlook on the future.

Please try to consider this when you see or read the negative stories and comments flooding the news and social media. I try to put it all in a greater perspective, understanding and appreciating the incredible resources and talent we have working to solve our problems and this helps me keep a positive attitude.

The Cryonics Institute continues to operate efficiently and is in a good place despite the isolation restrictions and quarantines in place in the State of Michigan. I am extremely proud of our staff and their continued professionalism during these trying times. I am also happy to have many volunteers and donors within our membership who selflessly contribute their time, experience and financial donations to help make CI better and stronger. This includes the CI Directors who work diligently with both professionalism and humility to ensure CI functions smoothly and constantly continues to improve.

2020 ELECTIONS

This reminds me of the upcoming CI elections and our Annual General Meeting, which will take place on Sunday, Sept. 13. There will be four director spots up for election in this year's annual election to serve a three-year term. The four incumbents, Stephan Beauregard, Myself, Steve Lucyx and Andy Zawacki will be running as well as a new challenger, CI Member, Shannon Blevins. Candidate bios will be including with voting members' mailed ballots and are also

included in this issue of CI Magazine.

I would also like to take this opportunity to announce my own candidacy for the CI board where I currently have the honor to serve as your President. If you are happy with the overall progress that you have seen with CI and the direction we have been heading in over the past several years, then I would be happy to serve you as a director for another three years and respectfully ask for your vote.

2020 AGM

This year's AGM will be held on Sept 13th Sunday at 3:00 pm US Central Time. Unfortunately, It will have to be a virtual meeting due to state and practical restrictions related to COVID mandates presently in place in Michigan, USA. Because of these restrictions, we are unable to hold our normal on-site meeting.

We will have our normal line up of speakers and at least one guest speaker, and hopefully can also conduct a question and answer session in the new online format.

Please see the announcement in this magazine or in the news section on cryonics.org for more specifics on attending. Just follow the link provided using any internet-enabled device to join the webinar at the appropriate time.

On the bright side, this does give our international and out-of-state members an easy way to participate, so we are hopeful this allows more people to get involved. However, I really enjoy the social networking side of the AGM and do hope next year we can go back to our normal in-person meeting.

Sincerely,

Dennis Kowalski - President, Cryonics Institute

CRYONICS INSTITUTE MAGAZINE

The digital newsletter of the Cryonics Institute
24355 Sorrentino Ct.
Clinton Township, MI 48035-3239

Phone: 1 (586) 791-5961
Toll-free: 1 (866) 288-2796 (North America)
FAX: 1 (586) 792-7062
Email: info@cryonics.org

© 2019 Cryonics Institute

ARTICLE SUBMISSIONS

Cryonics Institute or cryonics-related articles are welcome. Submissions: dg@cryonics.org

E-SUBSCRIPTIONS

As a CI member, you are automatically added to our email reminder list. To unsubscribe, please use the "unsubscribe" link at the bottom of your email.

Get the world's premier publication on prolonging youth & longevity for ONE YEAR, ABSOLUTELY FREE!



Packed with the latest medical findings, research results, and innovative treatment protocols, *Life Extension Magazine*® is the ultimate resource on staying healthy and living longer. Call now and get a one year subscription (12 issues) absolutely **FREE** ... that's a whopping **\$59.88 off** the newsstand price! And it's brought to you by the global leader in the field of preventing age-related disease for over 40 years.

Stay healthy with the highest-quality supplements money can buy.

Life Extension® is the only supplement brand solely dedicated to helping you live a longer, healthier life. Our premium-quality products are based on the latest clinical studies — made with pure,



potent ingredients at the same scientifically-validated dosages used in those studies—providing superior products for a better you!

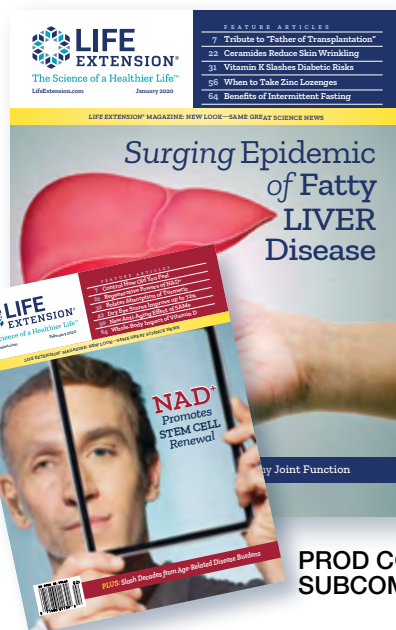
Don't just guess what your body needs.

Our expert team of Wellness Specialists can answer your health-related questions every day of the year. And they'll gladly create

a regimen of nutritional supplements, diet, and exercise that's customized for your needs.

Get more with Your Healthy Rewards.

With our FREE rewards program you earn valuable LE Dollars back on every purchase you make.* No membership required. For details visit LifeExtension.com/Rewards.



PROD CODE:
SUBCOMP

Subscribe to *Life Extension Magazine*® for FREE today!

Call toll-free 1-888-242-0145 to speak to a live operator at any time.

Or, log on to LifeExtension.com/CI

You must mention **Discount Code AVX201A** to get these savings • Offer expires January 31, 2021



These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

*Earn LE Dollars on all Life Extension purchases (except shipping fees, *Life Extension Magazine*® subscriptions, Premier program fees, and purchases made with LE Dollars or gift card). Redeem LE Dollars to purchase products, blood tests, sale items, and shipping fees at the rate of \$1 LE Dollar equal to \$1 U.S. dollar at checkout. LE Dollars may not be redeemed for Premier program fees or to purchase gift cards or *Life Extension Magazine*® subscriptions. LE Dollars have no cash value and are not redeemable for cash, transferable, or assignable for any reason. Offer not available to international customers serviced by distributors of Life Extension products. Prices subject to change without notice. Cannot be combined with any other offer. Copyright ©2020 Life Extension®. All rights reserved.

Membership Benefits

Why join the Cryonics Institute?

1) **A Second Chance at Life**

Membership qualifies you to arrange and fund a vitrification (anti-crystallization) perfusion and cooling upon legal death, followed by long-term storage in liquid nitrogen. Instead of certain death, you and your loved ones could have a chance at rejuvenated, healthy physical revival through cryopreservation.

2) **Affordable Cryopreservation**

The Cryonics Institute (CI) offers full-body cryopreservation for as little as \$28,000.

3) **Affordable Membership**

Become a Lifetime Member for a one-time payment of only \$1,250, with no dues to pay. Or join as a Yearly Member with a \$75 initiation fee and dues of just \$120 per year, payable by check, credit card or PayPal.

4) **Lower Prices for Spouses and Children**

The cost of a Lifetime Membership for a spouse of a Lifetime Member is half-price and minor children of a Lifetime Member receive membership free of charge.

5) **Quality of Treatment**

CI employed a Ph.D level cryobiologist to develop CI-VM-1, CI's vitrification mixture which can help prevent crystalline formation at cryogenic temperatures.

6) **Standby Options and Assistance**

CI's use of Locally-Trained Funeral Directors means that our members can get knowledgeable, licensed care. Or members can arrange for professional cryonics standby and transport by subcontracting with [Suspended Animation, Inc](#) or [International Cryomedicine Experts](#) (I.C.E.) CI also offers Standby

Training Materials and Kits for members who choose to perform Local Standby.

7) **Affordable Funding Options**

Cryopreservation with CI can be funded through life insurance policies issued in the USA or other countries. Prepayment and other options for funding are also available to CI members.

8) **Cutting-Edge Cryonics Information**

Members receive a free e-subscription to the Cryonics Institute Newsletter, as well as access to our Facebook page, Twitter feed, YouTube channel and an official members-only forum.

9) **Helpful, Professional Support**

CI's professional staff is available to answer any questions and address any concerns you may have about CI, your membership or Cryopreservation.

10) **Additional Preservation Services**

CI offers a sampling kit, shipping and long-term liquid nitrogen storage of tissues and DNA from members, their families or pets for just \$98.

11) **Support Education and Research**

Membership fees help CI to fund important cryonics research and public outreach, education and information programs to advance the science of cryonics.

12) **Member Ownership and Control**

CI Members are the ultimate authority in the organization and own all CI assets. They elect the Board of Directors, from whom are chosen our officers. CI members also can change the Bylaws of the organization (except for corporate purposes).

The choice is clear: Irreversible physical death, dissolution and decay, or the possibility of a vibrant and joyful renewed life. Don't you want that chance for yourself, your spouse, parents and children?



To get started, contact us at:

(586) 791-5961 • email: info@cryonics.org

Visit us online at www.cryonics.org

Member Readiness Checklist

*You've signed up for cryonics -
what are the next steps?*

Welcome Aboard! You have taken the first critical step in preparing for the future and possibly ensuring your own survival. Now what should you do? People often ask "What can I do to make sure I have an optimal suspension?" Here's a checklist of important steps to consider.

- ☐ Become a fully funded member through [life insurance](#) or easy pre-payments
Some members use term life and invest or pay off the difference at regular intervals. Some use whole life or just prepay the costs outright. You have to decide what is best for you, but it is best to act sooner rather than later as insurance prices tend to rise as you get older and some people become uninsurable because of unforeseen health issues. You may even consider making CI the owner of your life insurance policy.
- ☐ Keep CI informed on a regular basis about your health status or address changes. Make sure your CI paperwork and funding are always up to date. CI cannot help you if we do not know you need help.
- ☐ Keep your family and friends up to date on your wishes to be cryopreserved. Being reclusive about cryonics can be costly and cause catastrophic results.
- ☐ Keep your doctor, lawyer, and funeral director up to date on your wishes to be cryopreserved. The right approach to the right professionals can be an asset.
- ☐ Prepare and execute a Living Will and Power of Attorney for Health Care that reflects your cryonics-related wishes. Make sure that CI is updated at regular intervals as well.
- ☐ Review the [CI Standby Manual](#) and other materials designed to help you with you Standby Planning. Also, consider joining or forming a local standby group to support your cryonics wishes. This may be one of the most important decisions you can make after you are fully funded. As they say-"Failing to plan is planning to fail".
- ☐ Always wear your cryonics bracelet or necklace identifying your wishes should you become incapacitated. Keep a wallet card as well. If you aren't around people who support your wishes and you can't speak for yourself a medical bracelet can help save you.
- ☐ Get involved! If you can, donate time and money. Cryonics is not a turnkey operation. Pay attention and look for further tips and advice to make both your personal arrangements and cryonics as a whole a success. The stronger our organization is, the stronger your chances of success.
- ☐ Keep your records, contact information and contracts up to date. It is recommended you review your relevant information annually at a minimum. One way is to schedule time to review all your materials at the same time you submit your required Annual Proof of Funding to CI. Also, Be especially aware of easy to forget things like a new email, phone number or address. Remember, you can also contact us at any time to ask if you have any outstanding paperwork or other info that needs to be updated.

The online [CI Members' Information Form](#) is a great resource for updating your current information on file.



2020 AGM ANNOUNCEMENT

The 2020 Annual General Meeting of the Cryonics Institute is scheduled for 3:00 p.m. Central Time on Sunday, September 13. Since we cannot predict when the current COVID-19 restrictions in the state of Michigan might be lifted, we have decided to move ahead with our first ever virtual meeting. Unfortunately, this obviously means we cannot conduct the popular facility tours of years past nor any of our normal in-person social activities.

However, this does create an exciting new opportunity for members to join in who may not have been able to attend in the past due to distance, scheduling or travel expenses.

We will be using Zoom.us to broadcast the webinar and have been doing some early tests with the platform to see what it's capable of. We're happy to report it is pretty full-featured, and will allow guests to interact among one another via chat, as well as pose questions for the presenters.

Please note, this particular meeting is limited to the first 100 participants, so guests following the webinar link after that threshold will be directed to a YouTube livestream. This livestream will not allow the guests to interact directly with the presenters, however it should have group chat (if you are logged into your YouTube/Google account) and we will do our best to monitor that chat stream for questions.

To join the webinar from any internet-enabled device, follow:

<https://zoom.us/j/95890011769>

Or iPhone one-tap :

US: +16465588656,,95890011769#

or +13017158592,,95890011769#

To attend by Telephone:

Dial (for higher quality, dial a number based on your current location):

UNITED STATES

+1 646 558 8656

+1 301 715 8592

+1 312 626 6799

+1 669 900 9128

+1 253 215 8782

+1 346 248 7799

Webinar ID: 958 9001 1769

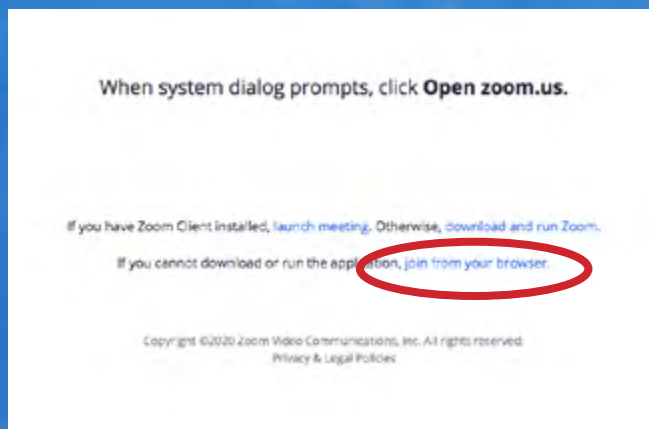
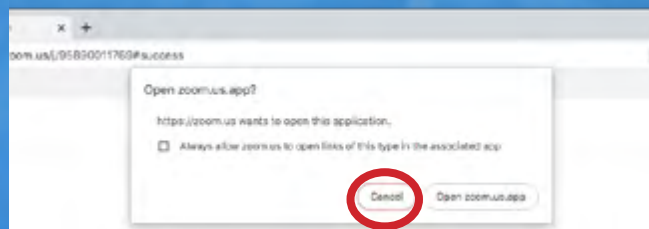
INTERNATIONAL CALLS

International numbers available at:

<https://zoom.us/j/95890011769>

Zoom App

Upon reaching the site you will be prompted to download and install the zoom.us app. If you prefer not to use the app, just hit "cancel" and follow the link provided to view the webinar in your browser.



2020 CI BOARD OF DIRECTORS CANDIDATES

Cryonics Institute (CI) Voting Members should have received their voting ballot for the election of four CI Directors from the five candidates running in the 2020 election. Each Voting Member of CI has four votes that can be distributed among the five candidates. As a Voting Member, you can give as many or as few of your four votes to an individual candidate you support, or divide them among several candidates you wish to support, but you can only cast a total of four votes.

Ballots with more than a total of four votes on them will be disqualified, but you do not have to use all four votes if you do not wish to. Because the postal mail service has been extremely slow due to the Covid 19 pandemic, CI will accept ballots by fax or email if you are concerned that we will not receive your ballot by the time of the on-line AGM. Our fax number is 586 792-7062 and our email address is info@cryonics.org.

CI DIRECTOR CANDIDATE STATEMENTS

(Candidates statements are listed in alphabetical order)



Stephan Beauregard

Hi, I'm happy to run for my re-election.

I'm 51 years old interested in Cryonics since 1993. I did several realizations for CI & I intend to do more. I also did many interviews & videos about Cryonics. I'm always present to share innovative suggestions. I convinced & helped many persons to sign up. I found willing people (Worldwide) to help Cryonicists no matter the Organization. I also translated CI documents & Cryonics videos. As I promised before my election in 2014, I set up an Official partnership in Canada (pick up the patient, ice bath, perfusion with CI-VM-1 & shipment to CI). To conclude, no matter your country, you will be able to have me to help. If you want a friendly Director who likes working as a team, with family values, leadership, positive outlooks, clear goals with results & loyal, vote for me. Thanks / Merci / Danke / Gracias / Grazie.



Shannon Blevins

I Shannon William Blevins, have decided to run for a director's position at the Cryonics Institute. I have been a life member of CI since July 2002. My wife, Heather Ann Blevins, has been a life member since January 2020. She is currently a moderator of the CI facebook group. My daughter, Avonell Blevins, has been a life member since shortly after she was born in 2006. My son, Joshua Blevins, has been a life member since he was 3 years old. Last year we added three new children to our family Riley Patrick, Jordyn Patrick, and Cash Clark. I am currently the Administrator of the CI Facebook group, editor of the CI Facebook page, an Administrator of the CI Twitter and Instagram, and creator and administrator of CI merchandise at CafePress. I have been a senior member of Civil Air Patrol Auxiliary USAF since 2006; in which I currently have an active 2nd Lieutenant's rank.



Dennis Kowalski

Dennis Kowalski is a Fire Fighter and a Nationally Registered EMT-Paramedic (NREMT-P). He is certified in advanced cardiac life support (ACLS), advanced pediatric life support (PALS), and as a AHA CPR Instructor. He also teaches emergency medicine to other emergency responders. His experience in emergency services has made him a vital asset as a CI director and he is eager to share what he has learned as a bridge between conventional emergency medicine and cryonics. Dennis's goals are to see positive growth and stability in CI membership. He'd like to see local support groups formed to promote unity, education and faster cryonics response. He is currently serving as CI's President and has overseen many positive changes. If you like the direction he has taken us please vote to reelect him.



Stephen Luyckx

Steve Luyckx was born in Detroit, Michigan, one of six children. Graduated from Michigan State University in '86 (BA Logistics) and a Masters degree in Finance a few years later. He currently lives about 20 miles from CI's headquarters and is married with three children.

His professional career includes two decades at Daimler/Chrysler Financial and in 2009 became the President of a joint venture between ADP and Reynolds to develop specialized financial software for automotive dealerships.

He has been one of the longest devoted board members dating back over 20 years and has attended every annual meeting since 1988. Steve brings a unique value to the board having 25+ years business experience with a strong financial background. He also maintains his license as a registered representative and continues to provide insights as a member of CI's investment committee and "inside auditor" of CI's financial/accounting practices



Andrew Zawacki

Andrew has been an employee of the Cryonics Institute for more than thirty five years. He handles most aspects of running the Cryonics Institute facility, some of which include day to day operations, patient suspensions, pet suspensions, patient care, bill paying, signing documents as a corporate officer and member services. He has served as a director of the Cryonics Institute for twelve years and as the corporate secretary for eight years.



Banner vector created by freepik - www.freepik.com

Regrettably, CI continues to be the target of a phishing attacker who is fraudulently claiming to be the Cryonics Institute and sending emails asking members to send money to accounts under his or her control. Please remember, CI's email address is info@cryonics.org, so be very careful to check the "sender" on emails you receive claiming to be from CI.

Any email you receive that is NOT from our official account, info@cryonics.org is very likely a scam, especially if the sender is asking for money.

Please check the address of any emails claiming to be from CI very carefully! If it is not from info@cryonics.org assume it is a scam email and DO NOT REPLY.

Don't be fooled by an address like info.cryonics@gmail.com or other combinations of "CI terms" like "CI", "info" or "cryonics" that may be included in the fake address. It is very easy to set up phony email accounts that look similar to the target address. Also, do not be fooled if the email is "signed" by Andy Zawacki or another CI representative. That information is available publicly, so it is very easy for the scammer to know who works for us and "sign" their message with anyone's name to seem more trustworthy.

Email Scammer Targeting CI Members

If you receive an email asking for money from any email address other than info@cryonics.org, DO NOT REPLY and PLEASE REPORT IT to one (or all) of the organizations below as well as FORWARD IT TO info@cryonics.org. You may also consider forwarding it to your local law enforcement agencies or inquire with your police department about other local or regional resources to report internet scams.

Hopefully if enough people report this person someone will catch him or her and put an end to this.

AGENCIES TO REPORT PHISHING SCAMS

If you got a phishing email or text message, report it. The information you give can help fight the scammers.

Step 1. If you got a phishing email, forward it to the Anti-Phishing Working Group at reportphishing@apwg.org.

If you got a phishing text message, forward it to SPAM (7726).

Step 2. Report the phishing attack to the FTC at ftc.gov/complaint.

You can report phishing to APWG by sending email to phishing-report@us-cert.gov.

NEW SECURE PAYMENT POLICY

In order to further protect our members, CI is instituting a new security policy for bank transfer payments. If you are planning to make a payment via bank transfer to CI, please CONTACT US FIRST BY PHONE (1 (586) 791-5961) to confirm the details for the transfer. NOTE: Regular annual or monthly PayPal payments are exempt from this policy

CI NEWS

What's happening at the Cryonics Institute

New Facility Update



CI staff continue to work hard prepping our new facility for operations. Photo at left shows Mike McCauley scraping the exterior walls in preparation for a new coat of paint. The DIY “cherry picker” was his own handiwork and is ideal for jobs like this and provides an extra measure of safety.

The stand is a clever use of CI’s Toyota forklift, bought used in 2018, which has been very handy to have for building renovations and other jobs.

Mike says “Having our own forklift has been very helpful. It is great to use for different building maintenance projects, unloading new cryostats, and general heavy lifting.”



CI member James Flynn runs a Youtube book review channel and recently did a video book review of *The Prospect of Immortality* by R.E. Ettinger. To watch, visit:

<https://www.youtube.com/watch?v=Rc4jmh17Md8>

CI is always looking for interesting feature stories about and from our members for this newsletter. If you have any interesting stories to share please contact dg@cryonics.org.

Available Now!



CHECK-IN

Download from the Google Play Store

play.google.com | Search "Cryonics Institute Check In" under "Apps"

The Cryonics Institute's Check-In app is a simple alarm and alert system that lets your phone send a message for help when you're not able to. The app uses a simple alarm system that checks in on you or a loved one at selected times during the day. If the user fails to respond to one of the scheduled alarms, after 10 minutes the app will automatically send a text message for help with GPS location to up to five contacts you have selected in advance.

The app is ideal for for persons who live alone or for times when you're fishing, hiking or otherwise out of contact, adding an extra level of security in the event of an emergency. For cryonics members, the app is specifically designed to augment your current standby notification plans.

Set it up for yourself or someone else in three easy steps:

1. Pick emergency contacts to message.
2. Set check-in frequency, e.g. every 4 hours.
3. Tell it when to be quiet, e.g. at night, while you sleep.

The app is built to be customized to fit your lifestyle. You can

choose to check in once a day, or once an hour. All day, specific days, or between certain hours - it's up to you. There is also an option for the timer to reset automatically when there is activity on the phone to reduce annoyance/hassle.

Alarm will vibrate 10 seconds then ring for 5 minutes, and repeat indefinitely. An automated emergency / help message will be sent out after 10 minutes if you have not responded to the alarm or pressed "No, I need help!"

The messages it sends are also now customizable.

Please note, permissions required are Send and view SMS, Make and manage phone calls and Access location. These permissions are necessary for the app to function, but do not compromise the security of your device. This is a standalone app on your device and no data is collected, sent to or stored by CI or any other third party. The app is complete and functional on download with no ads, paid upgrades, subscriptions or any additional payments required.

Our intention is to provide a simple and inexpensive tool suited to the unique standby needs of cryonics members.

10 Worst Mistakes in Cryonics

1) Not signing up ahead of time

Becoming a member, having contracts in place, and having paperwork in order should not be a last minute decision. Waiting until the last minute or after death results in an unnecessary delay of care or worse- No suspension at all! Don't wait. Sign up here and be prepared. <https://www.cryonics.org/membership/>

2) Not providing proof of funding

Some people believe that they can worry about funding later or if they have funding, they have put off providing proof of funding to CI. This should be done annually. Failing to provide this can result in a delay of care while the funding clears, which can take weeks. Send your proof of funding to CI now to be prepared.

3) Not telling anyone your plans

Being reclusive or not telling family or friends your wishes is not recommended. You should not be afraid to tell those around you what your wishes are, especially your next of kin. Wearing a bracelet, necklace or having identification or other items in view can speak to your wishes. This is all you have when you can't speak for yourself. Disasters have resulted in the past from not sharing. Talk with your family, close friends and your estate attorney, so you can be prepared.

4) Not planning

Many think cryonics is a turnkey service where you can just sign up and let fate take over. No matter how much you pay for cryonics, you are the only one who can make sure that you will have the best chance by planning. CI has provided a lot of information on our website and in our standby manuals. Those who plan succeed those who don't fail.

For more information visit: <https://www.cryonics.org/resources/ci-standby-kits-and-instructions>

5) Not notifying CI of Emergencies

There is no way that your cryonics provider can help you if they do not know of your emergency. Your family, friends, standby group or next of kin must immediately contact CI when you are having health issues or worse. It is also important for CI to know if you have up and coming surgeries or procedures, including terminal illness. Patients with a diagnosed terminal illness could enter hospice care, which might help your cryonics situation vastly. Any delay in notifying us directly could result in a poor suspension. Those helping you must have simple and clear instructions.

Here are some tips... <https://www.cryonics.org/resources/category/C57/57>

6) Committing suicide

Anyone who commits suicide who is not terminally ill or breaks a local law in doing so is potentially putting both themselves and our organization at great risk. CI will not risk itself for people who engage in behavior that goes against our mission to preserve life. Such activity will likely lead to an autopsy and long delays, rendering the suspension process substandard or impossible to carry out. Do not consider cryonics as a way out of your problems. You are likely to not get suspended under those circumstances. If you do not have a terminal illness and are considering suicide, you should seek mental health advice and treatment as soon as possible. <https://www.mentalhelp.net/articles/depression-hotline/>

10 Worst Mistakes in Cryonics

7) Engaging in Risky or illegal activities

Risky behaviors or associations that lead to the patient dying around suspicious circumstances will also likely lead to mandated autopsies that will also stand in the way of your cryonics wishes. It is best to use common sense and not put yourself in harm's way. Not only could your life be ended, so too could your chances of cryonics suspension or future reanimation. Use common sense and stay safe.

8) Providing financial or legal incentives that encourage your not being suspended.

Leaving all of your insurance or cryonics money to family if you are not suspended is certainly an option at CI, but ironically it does provide financial incentive for hostile family members to block your suspension. As often is the case, people will make sure you are not suspended to get a hold of your money. One suggestion is to leave family and next of kin some separate money from cryonics funding while suggesting that Cryonics funding go to cryonics as a donation no matter if you are buried or suspended. In addition, family or next of kin can be further compelled to cooperate if they will actually lose the money that is allocated to them for not cooperating. It is also suggested that your family be made fully aware of your wishes and stipulations, so they know what the results of their actions will be. You want to make sure you put incentives and disincentives in the correct place, so that your wishes are honored. It is suggested that your will and cryonics documentation reflect this and get reviewed by an attorney. See <https://www.cryonics.org/resources/protect-yourself-from-legal-threats>

9) Not removing a hostile next of kin from rights to your remains and finances

In many states and areas you can legally remove a hostile family member or next of kin from your estate. You can reassign someone who is sympathetic to cryonics and who has the legal authority to disposition of your remains, as well as your assets. In some states and locations there are disposition of remains reassignment documents, as well as powers of attorney, both in regards to financial as well as medical decisions. The executor of your will or anyone involved with making decisions should be sympathetic to your cryonics wishes. It is your responsibility to make your wishes very clear and to remove any doubt or potential legal resistance from family or next of kin. We suggest seeking legal advice to help you in this regard. Some members have even made a video statement of their wishes and given it to both their cryonics organization as well as their attorneys. Not being careful could mean that you don't get suspended, despite your wishes. Many are surprised to learn that they lose their rights upon legal death. See an attorney and prepare.

10) Dying under less than favorable conditions

This seems harder to control than the other situations, but there are some things you can do to make your situation more favorable. You can diet, exercise and follow the latest official medical advice to stay healthy longer. The longer you are alive, the better the technology will probably be for suspending you and the closer we will be to a future that may be able to reverse your condition. You can avoid travel to remote or hostile places where such travel is risky. Some overseas travel can result in long delays both logistically and bureaucratically. In general, dying near your cryonics provider or cryonics standby group helps your chances. Living a healthy lifestyle and staying sociable, while surrounding yourself with people who will act on your behalf is paramount. Building solid, positive relationships with good people is probably one of the most important things you can do to have your wishes honored. Take care of yourself and maintain social connectivity.

CI MEMBERSHIP

AUGUST 2020

Members	1,703
---------------	-------

Patients.....	187
---------------	-----

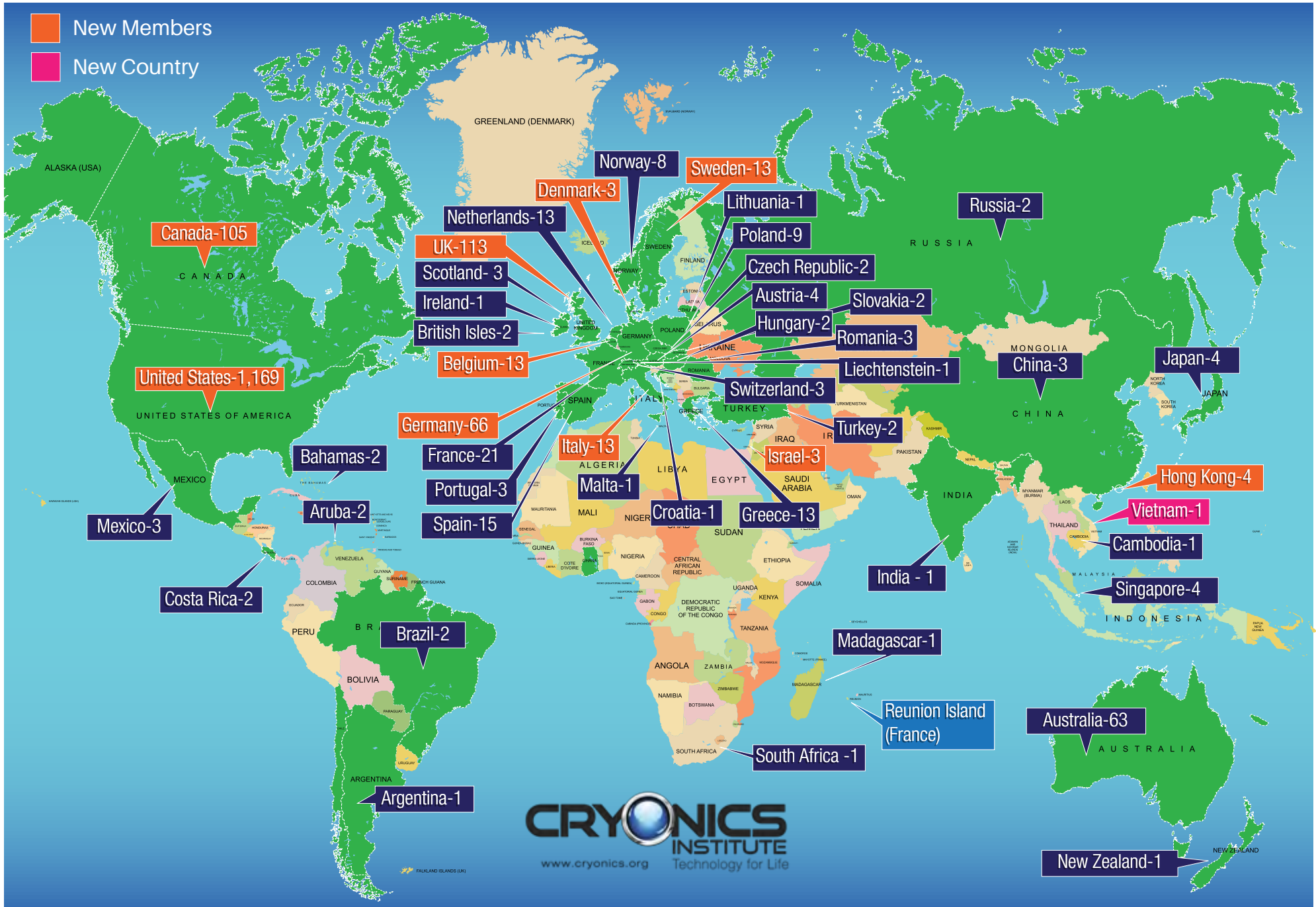
Pets 189

DNA/Tissue 308

SA 277

TOTAL

1,890



Who will be there for YOU?



Don't wait to make your plans. Your life may depend on it.



Suspended Animation fields teams of specially trained cardio-thoracic surgeons, cardiac perfusionists and other medical professionals with state-of-the-art equipment to provide stabilization care for Cryonics Institute members in the continental U.S.

Cryonics Institute members can contract with Suspended Animation for comprehensive standby, stabilization and transport services using life insurance or other payment options.



Speak to a nurse today about how to sign up.

..... **Call 1-949-482-2150**

or email tabitha@suspendedanimationinc.com

Freezing Life: The Current Trends in Cryopreservation

May 01, 2020 | By Maya Chergova, PhD



Stem cells illustration (stock image). | Credit: © nobeastsofierce / Adobe Stock

Cryopreservation has become an indispensable step in the daily routine of scientific research as well as in a number of medical applications, ranging from assisted reproduction and transplantations to cell-based therapies and biomarker identification. It is hardly possible to picture today's scientific and medical advancements without this technique.

The successful development and implementation of all the therapeutic and scientific discoveries involving cryopreservation relies on the correct and safe translation of the method from the laboratory to the clinical and manufacturing scale.

With the need to correctly use this technique, more research is focusing on optimizing cryopreservation methods and investigating what the long-term effects and consequences are on the physiology of the cryopreserved material.

The physics behind cryopreservation

In order to modify or troubleshoot a protocol, we should first understand how it works.

Cryobiology relies on very complex physico-chemical processes and reactions, but briefly, with the drop in temperature the water from the extracellular space transitions from liquid to solid state and with this ice crystal formation begins. With water being engaged into crystals the solute concentration increases and induces the osmotic efflux from the inside of the cells. The controlled reduction of temperature is needed to ensure the sufficient osmotic pressure difference that reduces the water levels inside the cell and thus prevents the formation of ice crystals within it. Simultaneously to water exit, cryoprotectant agent enters the cell and increases its viscosity, thus preventing the cell's shrinkage due to dehydration^{1,2}....

[ARTICLE CONTINUES AT TECHNOLOGYNETWORKS.COM](https://www.technologynetworks.com)



New quantum computers can operate at higher temperatures

By Emily Conover | April 15, 2020

Quantum computing's deep freeze is beginning to thaw.

Computers that harness quantum physics could trump standard computers on certain types of calculations. But the machines typically work only at temperatures tiny fractions of a degree above absolute zero. Now, two teams of physicists report that they've created silicon-based quantum computers that work under warmer conditions.

The devices operate more than a degree above absolute zero, the scientists report in two papers published in the April 16 *Nature*. Although still chilly, that temperature is much easier to achieve than the approximately 10 millikelvin (0.01 degrees above absolute zero) temperatures typical of a popular type of quantum computer based on superconductors, materials which transmit electricity without resistance.

Current quantum computers top out at around 50 quantum bits, but scientists expect quantum computers will need millions of these qubits to perform some tasks. So scientists are working to scale them up.

Simplifying the cooling process could help the computers grow. That's because extremely cold quantum computers have an additional complication. The electronic components required to control the qubits don't work under such chilly conditions, and need to be kept in a warmer location and connected to the quantum chip with wiring. That wiring would become unreasonably complex as quantum computers scale up. But with quantum computers that operate at these warmer temperatures, the qubits and electronics could be joined together, akin to the integrated circuits that helped make conventional computers increasingly powerful and ubiquitous...

ARTICLE CONTINUES AT [SCIENCENEWS.COM](https://www.sciencenews.com)

Vox **recode**from **VOX.COM/RECODE**

Researchers search for an effective treatment against the coronavirus in France. Jeff Pachoud/Getty Images

Scientists are identifying potential treatments for coronavirus via artificial intelligence

By Rebecca Heilweil Feb 7, 2020, 1:40pm EST

To battle the novel coronavirus that's been linked to Wuhan, China, researchers are using artificial intelligence to discover potential treatments, including already-approved drugs and completely new compounds. At the same time, the pneumonia-like illness has only gotten worse. As of Friday morning, the 2019-nCoV coronavirus had taken the lives of more than 600 people and infected more than 30,000, with cases documented in at least 25 countries.

Researchers at the British artificial intelligence startup Benevolent AI say they used the tech to search for existing approved drugs that might be helpful in limiting the virus's infection. Another set of scientists affiliated with Deargen, a drug discovery company based in South Korea, say that

they used deep learning to find various available antiviral drugs that could be investigated as a potential treatment (that research has not yet been peer-reviewed). Meanwhile, a Maryland-based biotech company, Insilico, said it used AI to come up with new molecules that could serve as potential medications, and it will now synthesize and test 100 of the compounds, according to Fortune.

Here's how Benevolent described its work: The company's researchers wanted to find an already-approved drug that could block the infection process. So they sent their AI looking for drugs, based on chemical properties that they knew the coronavirus to have, through a repository of an enormous amount of medical data, including scientific...

ARTICLE CONTINUES AT [VOX.COM/RECODE](https://www.vox.com/recode)

ScienceDaily®

from SCIENCE DAILY.COM



Image designed by Freepik

Plant-based diets shown to lower blood pressure even with limited meat and dairy

July 24, 2020 | Source: University of Warwick

Consuming a plant-based diet can lower blood pressure even if small amounts of meat and dairy are consumed too, according to new research from the University of Warwick.

Published online by a team from Warwick Medical School in the Journal of Hypertension today (25 July), they argue that any effort to increase plant-based foods in your diet and limit animal products is likely to benefit your blood pressure and reduce your risk of heart attacks, strokes and cardiovascular disease. They conducted a systematic review of previous research from controlled clinical trials to compare seven plant-based diets, several of which included animal products in small amounts, to a standardised control diet and the impact that these had on individuals' blood pressure.

Plant-based diets support high consumption of fruits, veg-

etables, whole grains, legumes, nuts and seeds, limiting the consumption of most or all animal products (mainly meat and dairy).

High blood pressure is the leading risk factor globally for heart attacks, strokes and other cardiovascular diseases. A reduction in blood pressure has important health benefits both for individuals and for populations. Unhealthy diets are responsible for more deaths and disabilities globally than tobacco use, high alcohol intake, drug use and unsafe sex put together. An increased consumption of whole grains, vegetables, nuts and seeds, and fruit, as achieved in plant-based diets, could avert up to 1.7, 1.8, 2.5 and 4.9 million deaths globally respectively every year according to previous research...

[ARTICLE CONTINUES AT SCIENCEDAILY.COM](https://www.sciencedaily.com)

ScienceDaily®

from SCIENCE DAILY.COM

Sputum testing provides higher rate of COVID-19 detection

July 24, 2020 | Source: Brigham and Women's Hospital

Early and accurate detection is critical for preventing the spread of COVID-19 and providing appropriate care for patients. Nasopharyngeal (NP) swabs, which require inserting a long shaft into the nasal cavity to collect a sample from the back of the nose and throat, are currently the gold standard for collecting a specimen for diagnosis. But the procedure is technically challenging, often uncomfortable for patients and requires personal protective equipment that may be in short supply. Other approaches to collecting specimens -- including from an oropharyngeal swab and sputum -- have been tested in small studies, but there is uncertainty about which method is best for detecting the virus.

In a new study published in *EBioMedicine*, investigators from Brigham and Women's Hospital conducted a systematic review and meta-analysis, analyzing data from more than 3,000 specimens to compare the three approaches. The team found that sputum testing detected the RNA of the virus that causes COVID-19 at significantly higher rates while oropharyngeal swab testing had lower rates. Regardless of the collection method, the earlier samples were collected after symptoms began, the higher the detection rate.

"The accurate diagnosis of COVID-19 has implications for health care, return-to-work, infection control and public health," said corresponding author Jonathan Li, MD, a faculty member in the Division of Infectious Diseases at the Brigham. "Our gold standard in and out of the hospital is the nasopharyngeal swab, but there's a lot of confusion about which sampling modality is best and most sensitive. Our study shows that sputum testing resulted in significantly higher rates of SARS-CoV-2 detection and supports the use of this type of testing as a valuable method for the diagnosis and monitoring of COVID-19 patients."

Li and his colleagues scoured the literature -- both preprints and published papers -- for studies that assessed at least...



Image designed by Freepix

[ARTICLE CONTINUES AT SCIENCEDAILY.COM](https://www.sciencedaily.com)

VentureBeat

from VENTUREBEAT.COM



Cerebras Systems is making wafer-scale AI chips. Image Credit: Cerebras Systems

Cerebras Systems unveils a record 1.2 trillion transistor chip for AI

Dean Takahashi | @deantak | August 19, 2019

*New artificial intelligence company Cerebras Systems
is unveiling the largest semiconductor chip ever built.*

The Cerebras Wafer Scale Engine has 1.2 trillion transistors, the basic on-off electronic switches that are the building blocks of silicon chips. Intel's first 4004 processor in 1971 had 2,300 transistors, and a recent Advanced Micro Devices processor has 32 billion transistors.

Most chips are actually a collection of chips created on top of a 12-inch silicon wafer and are processed in a chip factory in a batch. But the Cerebras Systems chip is a single chip interconnected on a single wafer. The interconnections are designed to keep it all functioning at high speeds so the trillion transistors all work together as one.

In this way, the Cerebras Wafer Scale Engine is the largest processor ever built, and it has been specifically designed to

process artificial intelligence applications. The company is talking about the design this week at the Hot Chips conference at Stanford University in Palo Alto, California.

Samsung has actually built a flash memory chip, the eUFS, with 2 trillion transistors. But the Cerebras chip is built for processing, and it boasts 400,000 cores on 42,225 square millimeters. It is 56.7 times larger than the largest Nvidia graphics processing unit, which measures 815 square millimeters and 21.1 billion transistors.

The WSE also contains 3,000 times more high-speed, on-chip memory and has 10,000 times more memory bandwidth.

The chip comes from a team headed by Andrew Feldman...

[ARTICLE CONTINUES AT VENTUREBEAT.COM](https://venturebeat.com/article/cerebras-systems-unveils-a-record-1-2-trillion-transistor-chip-for-ai/)



from **LIFEEXTENSION.COM**



Image designed by Freepik

Research suggests iron levels as a factor in aging

August 19, 2019 5:30 AM

July 17 2020. Research reported on July 16, 2020 in Nature Communications indicates that avoidance of high iron levels may be associated with a longer life.

High iron levels increase damaging oxidative stress and have been linked with Parkinson disease, Alzheimer disease and other disorders.

For their research, scientists at the University of Edinburgh and the Max Planck Institute for Biology of Ageing in Germany utilized genetic data from over a million people. They identified ten regions of the genome associated with long lifespan, healthspan (years lived relatively free of disease)

and extreme longevity. Genes associated with iron metabolism in the blood were found to be overrepresented in all three measures of aging. The finding indicates that these genes may contribute to a long and healthy life and could help explain some of the variance in rate of aging observed among different individuals.

"We are very excited by these findings as they strongly suggest that high levels of iron in the blood reduce our healthy years of life, and keeping these levels in check could prevent age-related damage," commented coauthor Dr Paul Timmers of the University of Edinburgh's Usher Institute....

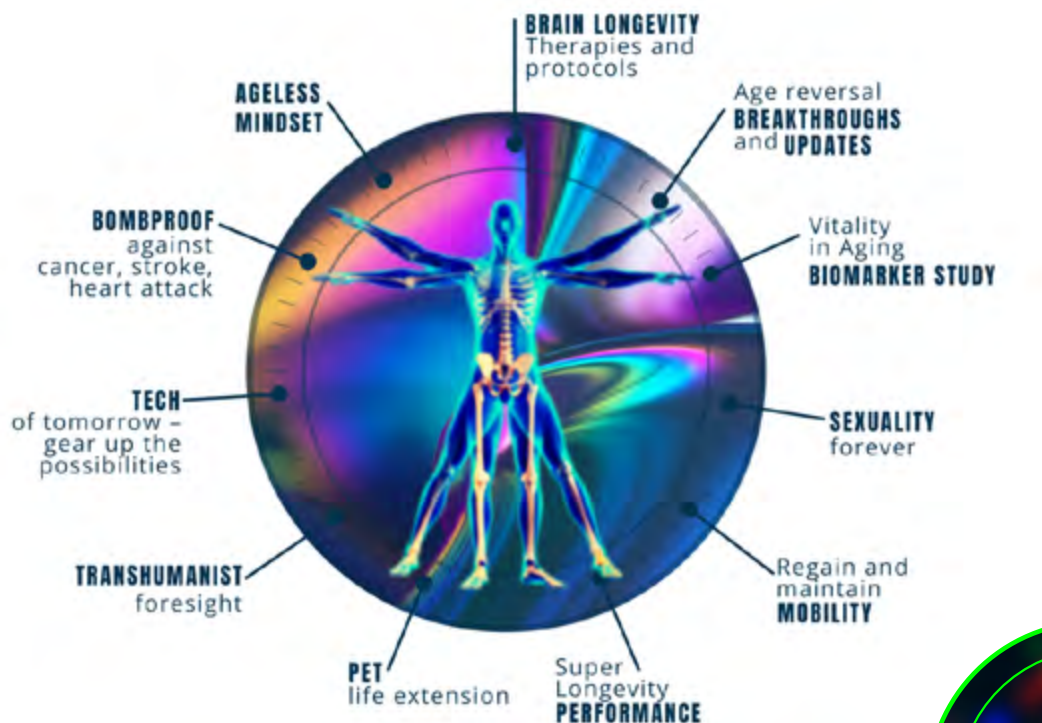
[ARTICLE CONTINUES AT LIFEEXTENSION.COM](https://www.lifeextension.com)

RAADFEST.COM



The science of staying alive

2020 topics to include the following:



FOUNDING SPONSORS





Worldwide Cryonics Groups

AUSTRALIA: The Cryonics Association of Australasia offers support and information for Australia & nearby countries. caalist@prix.pricom.com.au. Their Public Relations Officer is Philip Rhoades. phil@pricom.com.au GPO Box 3411, Sydney, NSW 2001 Australia. Phone: +6128001 6204 (office) or +61 2 99226979 (home.)

BELGIUM: Cryonics Belgium is an organisation that exists to inform interested parties and, if desired, can assist with handling the paperwork for a cryonic suspension. The website can be found at www.cryonicsbelgium.com. To get in touch, please send an email to info@cryonicsbelgium.com.

BHUTAN: Can help Cryonics Institute Members who need help for the transport & hospital explanation about the cryonics procedure to the Dr and authorities in Thimphou & Paro. Contacts : Jamyang Palden & Tenzin Rabgay / Emails : palde002@umn.edu or jamgarnett@hotmail.co Phones : Jamyang / 975-2-32-66-50 & Tenzin / 975-2-77-21-01-87

CANADA: This is a very active group that participated in Toronto's first cryopreservation. President, Christine Gaspar; Vice President, Gary Tripp. Visit them at: <http://www.cryocdn.org/>. There is a subgroup called the Toronto Local Group. Meeting dates and other conversations are held via the Yahoo group. This is a closed group. To join write: csc5@cryocdn.org

QUEBEC: Contact: Stephan Beauregard, C.I. Director & Official Administrator of the Cryonics Institute Facebook Page. Information about Cryonics & perfusion services in Montreal for all cryonicists. Services available in French & English: stephan@cryonics.org

CHILE: Community oriented to provide reliable information on human cryopreservation, as far as technical scientific as well as other practical aspects. Dissemination, awareness and education on issues related to the extension of life in general and cryonics in particular. Contact José Luis Galdames via galdamesjoseluis@gmail.com or via Facebook at [Cronica Chile](https://www.facebook.com/CronicaChile).

FINLAND: The Finnish Cryonics Society, (KRYOFIN) was established in 2008 and is an organization collaborating with all nearby groups and organizations. Contact them at: kryoniikka.fi Their President is Ville Salmensuu ville@salmensuu.fi

FRANCE: SOCIETE CRYONICS DE FRANCE is a non profit French organization working closely with European cryonics groups. For more information: J.Roland Missionnier: phone: 33 (0) 6 64 90 98 41 or email: cryonicsnews.inpi@gmail.com • **Facebook group**

Francecryonics-Webnode Vivien Gruss, member of Cryonics Institute, has opened a web site for the information of persons interested in cryonic suspension.

GERMANY: DGAB There are a number of Cryonicists in Germany. Their Organization is called "Deutsche Gesellschaft für Angewandte Biostase e.V.", or short "DGAB". More information on their homepage at www.biostase.de. If there are further questions, contact their Board at vorstand@biostase.de

GERMANY: CRYONICS-GERMANY is an active group providing cryonics support, including a special 8-member Standby Response Team. Members from Germany or Internationally are welcome to join. at <http://cryonics-germany.org>. Direct inquiries to contact@cryonics-germany.org.

INDIA: Can help Cryonics Institute Members who need help for the transport & hospital explication about the cryonics procedure to the Dr and authority in Bangalore & Vellore Area. Contacts : Br Sankeerth & Biooster Vignesh / Email : vicky23101994@gmail.com Phones : Biooster / 918148049058 & Br Sankeerth / 917795115939

ITALY: The Italian Cryonics Group (inside the Life Extension Research Group (LIFEXT Research Group)) www.lifext.org and relative forum: forum.lifext.org. The founder is Bruno Lenzi, contact him at brunolenzi88@gmail.com or Giovanni Ranzo at: giovanni1410@gmail.com

Kriorus Italy: Representative Filippo Polistena, email: filippopolistena45@gmail.com. phone: +39 334 298 9378

JAPAN: Hikaru Midorikawa is President Japan Cryonics Association. Formed in 1998, our goals are to disseminate cryonics information in Japan, to provide cryonics services in Japan, and eventually, to allow cryonics to take root in the Japanese society. Contact mid_hikaru@yahoo.co.jp or <http://www.cryonics.jp/>

NEPAL: Can help Cryonics Institute Members who need help for the transport & hospital explanation about the cryonics procedure to the Dr and authorities in Kathmandu. Contact : Suresh K. Shrestha / Email : toursuresh@gmail.com Phone : 977-985-1071364 / PO Box 14480 Kathmandu.

THE NETHERLANDS: Dutch Cryonics Organization is the local support group since 2002 and able to provide advice, standby, perfusion and shipment 24/7, in case of need. We are an active group utilizing the latest equipment. New members from The Netherlands welcome.

E-mail: info@cryonisme.nl
website: <http://www.cryonisme.nl>

NORWAY : Can help Cryonics Institute Members who need help for the transport & hospital explication about the cryonics procedure to the Dr, funeral home and authority at Sandvika. Contacts : Gunnar Hammersmark Sandvika Begegravelsesbyrå / Phones : 011-47-2279-7736

HELP US STAY UP-TO-DATE!

Please send any corrections or changes to the address below. If you know of, or are considering starting a support, standby or other cryonics-related group in your area, please send details to

dg@cryonics.org.



RUSSIA: KrioRus is a Russian cryonics organization operating in Russia, CIS and Eastern Europe that exists to help arrange cryopreservation and longterm suspension locally, or with CI or Alcor. Please contact krorius@gmail.com for additional information or visit <http://www.krorius.ru>. Phone: +7 962 947-50-79

SWEDEN: www.kryonik.se or Facebook: Svenska Kryonikföreningen. Initially, the society will focus on providing information and assistance to those who wish to sign up for cryonics. Eventually, we also hope to provide practical assistance in cases, possibly in collaboration with other European groups.

SWITZERLAND: www.cryosuisse.ch

CRYOSUISSE The Swiss Society for Cryonics is an active group with over 30 members. To join, email info@cryosuisse.ch

UNITED KINGDOM: Cryonics UK is a nonprofit UK based standby group. www.cryonics-uk.org Cryonics UK can be contacted via the following people: Tim Gibson: phone: 07905 371495, email: tim.gibson@cryonics-uk.org. Victoria Stevens: phone: 01287 669201, email: vicstevens@hotmail.co.uk. Graham Hipkiss: phone: 0115 8492179 / 07752 251 564, email: ghipkiss@hotmail.com. Alan Sinclair: phone: 01273 587 660 / 07719 820715, email: cryoservices@yahoo.co.uk

Can help Cryonics Institute Members who need help, funeral home, transport at London. Contact : F.A. Albin & Sons / Arthur Stanley House Phone : 020-7237-3637

INTERNATIONAL: The Cryonics Society is a global cryonics advocacy organization. www.CryonicsSociety.org. They publish an e-newsletter *FutureNews*. Phone: 1-585-643-1167.

Please note, this list is provided as an information resource only. Inclusion on the list does not constitute an endorsement by the Cryonics Institute or our affiliated organizations. We urge our readers to use this list as a starting point to research groups that may meet their own individual needs. We further note that readers should always use their own informed judgment and a reasonable amount of caution in dealing with any organization and/or individual listed.



Bulletin Board



Writers Wanted

Got something to say?

The CI Newsletter is looking for submissions from our readers!

If you've got a great idea for a story, please forward it to:

dg@cryonics.org

CRYONICS QUESTIONS?

Need some help with your membership?

Want to understand your suspension options?

Need to fill out important cryonics paperwork?

CONTACT US!

Our team is here to help.

1-(586) 791-5961

FREE Memberships?!!

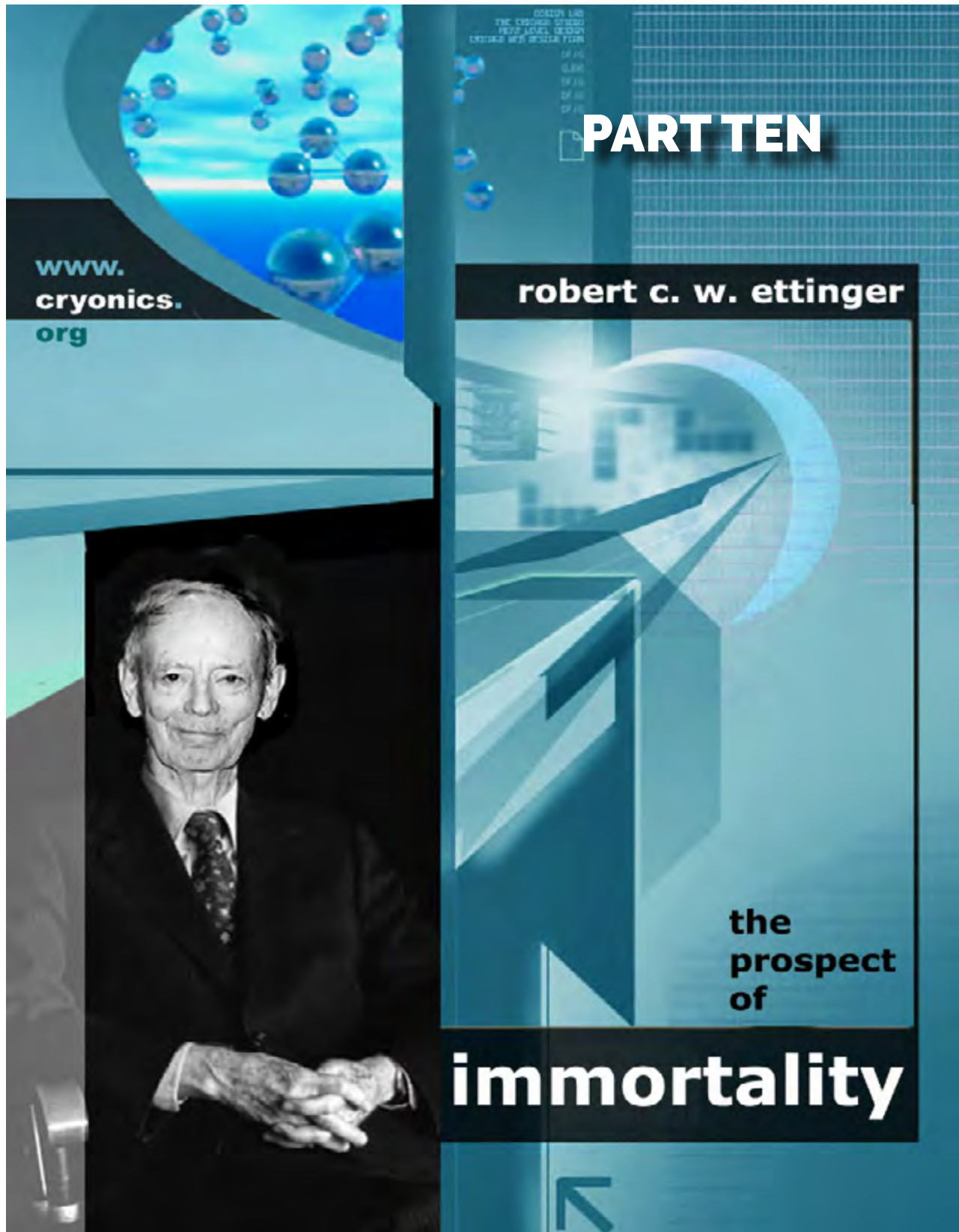
Did you know the Cryonics Institute offers FREE LIFETIME Memberships for minor children of paid Lifetime Members? Any minor children (under the age of 18) of fully-paid Lifetime Members are eligible for a permanent Lifetime Membership of their own. If you'd like to give your children the priceless gift of a second chance of life with you in the future, please contact us at 1 (586) 791-5961 and ask about Lifetime Membership Benefits.



Show the world you support cryonics with CI gear from our **Cafe Press store**.

CI Reading Room

Serializing essential works on cryonics



CHAPTER X

Manners, Modes, and Morals of Tomorrow

Almost every commodity, however desirable or necessary, if it is not an immediate necessity, needs to be "sold," whether it is life insurance, food, medicine, or anything else. If respiration were not reflex, many people would have to be given a hard sell to draw a breath of air. Immortality itself will have to be "sold" to enough people to start the freezer programs.

Will tomorrow really be better? Is it worth the struggle? If we agree that it will become possible to mould personality, then logically this alone should assure an affirmative answer; we can all be made into jolly, as well as jolly good, fellows. Still, we would like some assurance that the external changes will be worthwhile also.

In the previous chapter we talked about the uses of immortality in the most general terms, and of course detailed prediction on a long-term basis is entirely out of the question. However, it will be amusing to spell out a few of the shorter-range possibilities, and it may help make the prospect seem more real and personal. There will be no attempt here to be systematic, let alone exhaustive.

Before beginning this sketchy catalogue, it might be well to give just a hint of the more distant future - not by indicating anything that will be in it, for this is hopeless, but by specifying something that will not.

Beyond Beowulf

A favorite bromide of writers is that "human nature doesn't change." But the manifestations of human nature vary rather widely with cultural differences,

as we know, e.g., from studies of identical twins reared separately; and soon there will be changes in its biological basis as well, with results beyond guessing.

It is true that we still read Beowulf, and the Iliad, and Hamlet, and many scholars blithely assume that these and similar works will remain in our culture forever. But in the last thirty or forty thousand years, the supposed tenure of modern man on earth, cultural changes have been relatively small, and biological changes virtually nil. In the next few centuries, the changes will be incomparably greater.

I am convinced that in a few hundred years the words of Shakespeare, for example, will interest us no more than the grunting of swine in a wallow. (Shakespearean scholars, along with censors, snuff grinders, and wig makers, will have to find new, perhaps unimaginable occupations.) Not only will his work be far too weak in intellect, and written in too vague and puny a language, but the problems which concerned him will be, in the main, no more than historical curiosities. Neither greed, nor lust, nor ambition will in that society have any recognizable similarity to the qualities we know. With the virtually unlimited resources of that era, all ordinary wants will be readily satisfied, either by supplying them or by removing them in the mind of the individual. Furthermore, if civilization will have survived that long amid the titanic forces available, it would seem that satisfactory modes of living and mutual accommodation must have been worked out. Competitive drives, in the inter-personal sense, may or may not persist; but if they do, it will be in radically modified form.

It is impossible to say whether most of us will be resuscitated before or after man has worked really drastic changes in himself. My own guess is that most of us now living will be frozen by non-damaging methods, and the reversal of aging will be easier than a complete redesigning and rebuilding of the brain and body, and we can therefore expect to awaken while people are still more or less human. Let us then cast a few glances into the middle distance, and try to perceive some of the facets of life in this period.

Stability and the Golden Rule

As already suggested, the prospect of immortality should provide a strong damper on rash and impetuous action and anti-social behavior. National leaders will want to preserve their own skins, and will be forced to take a much longer view. A temporary advantage will become unimportant. Everyone's life will depend on the steady functioning of the freezers, and hence on the reliability of economic and administrative institutions. No one will be excessively greedy, in the knowledge that soon he will be stiff and cold and at the mercy of his successors, whose good will he dare not endanger.

In the era of the freezers, and still more markedly when immortality has actually been realized, there will be very salutary effects on interpersonal behavior. Our actions will be strongly influenced by the realization that not only ourselves, but the other fellow also, will be around a long time. The people we meet in business life and in casual encounters of every kind can no longer be counted upon to fade away and disappear; instead, our paths may cross repeatedly in a long future dimly seen. All business becomes "repeat" business; there are no more one-shots.

The Golden Rule then becomes not an ideal but a necessity, and there may well occur a

Golden Age of morality and ethics, with every man counting every other his friend and neighbor.

(Some wiseacre is sure to ask what happens when a masochist tries to apply the Golden Rule. But it is not claimed either that the Rule is always crystal clear, or, even if it were, that the disposition to apply it would automatically liquidate dissension, but only that the Rule is on the whole a good one, and its general application would be a large step in the right direction.)

Possibilities of Stagnation and Decadence

Speculating about the ways of immortals, some writers have worried about decadence engendered by the excessive caution and timidity of those who are potentially immortal but vulnerable to accident. It has been conjectured that society would be emasculated, that new ventures would cease, that every citizen might eschew risks of all kinds - even refusing so much as to use vehicles for fear of an eventual accident.

This kind of development seems to me highly unlikely. In the second place, medical art will necessarily be so far advanced that few kinds of accident could result in permanent death. In the first place, creative drives and competitive pressures will persist in some form, and can be depended upon to keep the yeast fermenting nicely. As always, those who refuse risks and challenges will probably sooner or later be trampled into the ground - perhaps in a humane and genteel way, but firmly. As the lyricist says, "It's not the earth the meek inherit, but the dirt."

Even exceptionally dangerous jobs are not likely to go begging. A worthy cause, high pay, and glory will find at least a few takers for a long time to come.

More serious and sinister is the threat of decadence through strange and sophisticated new forms of seduction. We already have large numbers of "TV bums" with bent spines, bloated bellies, and stupefied minds from endless hours of slouching, snacking, and staring. Will an ordinary man be able to withstand the temptation to sit in a corner all day and tickle himself with ESB? What will happen when the circuits of the brain are well understood, and hallucinations of the most convincing reality can be made to order, so that a man can rent a tape, put on his Dreamie helmet, and experience the part of the hero in a romantic adventure?

No neat and easy answer seems possible here. In China there actually are derelict souls who spend all their time in opium dens, if they can manage it. But this kind of activity would seem to be more or less self-limiting, since

no one can retire from the world altogether without having someone else to look after him and his affairs.

An Eye for an Eye

It has been speculated that in a Golden Age criminals will be "cured" rather than punished. This notion seems to me faulty, or at least dubious, in three respects.

First, we cannot yet say for sure that every criminal is actually sick. He may be a healthy man who has decided (perhaps rightly!) that his interests and those of society do not coincide.

Second, even if antisocial behavior invariably resulted from a specific, curable disease, it would still be necessary to impose punishment for its deterrent effect. It is true that in medieval England petty crime flourished in spite of cruel punishments, and that crimes of impulse and passion are difficult to deter, and

that many criminals are repeaters; but without deterrence the situation would be much worse, and the proposition remains generally valid.

Third, the general psychological atmosphere, and the feelings of the victims of wrongdoing, may for a long time demand traditional ideas of "justice," including its aspect of revenge.

It will become possible, in some sense and under some kind of interpretation, at last to make the punishment fit the crime. Culprits may be made to suffer all that their victims have suffered, and to make complete restitution. Would-be adventurers, exploiters, tyrants, and rogues will be curbed by fear of society's revenge: they will have much more to fear than death. There will be no more attitude of "might as well be hanged for a sheep as a lamb." If a tyrant causes a thousand people to be half starved for a year, he might be punished by being half starved himself for a thousand years - perhaps with a couple of centuries off for good behavior, or such other modification as would not weaken the deterrent principle.

Sex Morals and Family Life

It was indicated in Chapter VII that birth control will almost certainly sooner or later become de rigeur, at least for a certain period in history, and that this would happen even without freezers and immortality, simply because of the problem of natural increase. The availability and general practice of birth control by methods less clumsy than those now in general use - e.g., pills for either man or woman - and the much smaller average size of families and much smaller fraction of children in the population, will have many effects in many areas of life. But another development, seldom yet discussed, will have even larger effects.

Research proceeds apace on techniques of "ectogenesis," or the raising of "test tube" babies in artificial wombs instead of allowing normal gestation in the body of the mother. It is also foreseen that it will be possible to produce a child with only one parent, which could be either a man or a woman. (119) Such a parthenogenetic child, since it would have the same genetic make-up as its parent, would in a sense be a twin as well as offspring.

Ordinarily, one presumes, a child will have two parents. Few of us are so vain as to desire our children to be duplicates of ourselves. But ectogenesis will certainly become the rule: when it becomes available, what woman will prefer the ordeal of "carrying" and delivering a child?

At present, of course, many women will not admit the ordeal is disgusting, and may even insist it is "beautiful." But this is obviously just a psychological trick, making a virtue of necessity. One might just as well claim our methods of waste elimination are beautiful.

There will, of course, be a transition period and a rear-guard of opposition to this practice. Its opponents will be the same kind of people as those who howled against the use of anesthesia in childbirth when this was first introduced, claiming it was "unnatural," and that it was "intended" for women to suffer as punishment for their sins, and that mother love would be reduced if the pain of childbirth were removed.

Fathers love their children as much as mothers, without carrying or delivering them, and there will be no loss in this respect when ectogenesis becomes the rule. But there will be profound social changes.

Essentially, motherhood will be abolished. A child will usually not have a father and a mother, but instead will have two "fathers,"

one male and one female. The word "mother" may or may not persist, but its essence - gestation and delivery - will be gone. (Nursing is already a nearly abandoned custom in many communities.)

The differences between men and women will then be at a minimum. Most of the present differences are cultural, and the difference in physical size is of little importance; there is more difference in size between certain races of man than there is between men and women of the same race. Women will obtain genuine equality in almost all spheres.

In sex relations, women may become universally the aggressors. After all, they are not as definitely limited in capacity as are men; and when women need no longer fear pregnancy, the traditional roles of "taker" and "giver" may be reversed.

On the other hand, full equality may be restored by the discovery of ways to give men unlimited virility.

These developments need not be regarded as especially alarming. Sex is only a part of life, and not the most important part. Its problems form only a part of the enormous package of problems we must wrap up.

The relaxed sexual habits that may develop do not seem likely to eliminate family life nor demolish the institution of marriage. It may become customary to experiment more or less promiscuously early in life, and marry at a later time than is usual now. But most people will still want children. Even in the absence of children, marriage serves an important purpose, as we know from the many successful childless marriages, and still more from the many successful marriages of divorced and widowed people whose children are grown and gone. Most people, sooner or later in life, want and need the stability, comfort, and se-

curity of a relationship which neither friends nor blood relatives can supply.

The Question of Non-human Intelligent Entities

Modes and standards of conduct and intercourse may have to be developed with respect to intelligent creatures other than human. The three outstanding possibilities seem to concern the dolphins, robots, and extraterrestrial life forms.

It has been ascertained that dolphins have brains larger and more complex than those of men. Some investigators believe the dolphins, despite their lack of hands and artifacts, may be truly intelligent, and can perhaps be taught to communicate. (60) If this is true, we may eventually have to share the planet with them, and perhaps with some of their cousins, the whales.

With respect to thinking machines, the problem is much thornier. To begin with, even though the philosophical notion of dualism has been singularly unproductive and the dualists in more or less steady retreat, nevertheless the mind-body problem remains unresolved. And even if we forget about dualism, it remains conceivable that a "machine" made of meat and gravy may have modes of existence not available to a machine of tubes and wires. That is, it is conceivable - although I think it farfetched - that regardless of their problem-solving, decision-making, and goal-seeking abilities, machines will never be worthy of the appellation "living." But if we can find an appropriate test for the first thinking machine, Adam MacElectrosap, and discover he really does have awareness and essential life, then we shall be faced with a tough moral problem in deciding whether to keep him enslaved. (MACHINE, ELECTRONIC, SAPIENT, of course.)

We may also face a tough practical problem in deciding whether it is safe to keep him at all, enslaved or not. The possibility, celebrated in many a gruesome story, that our creations may some day turn on us and overwhelm us, is a real one. Professor Wiener, for example, believes that machines may not inevitably remain subject to man. (101)

After all, intelligent machines will necessarily have some degree of independence, initiative, and unpredictability - this is inherent in their intelligence, and this is why they are of value. Can we hope to control such entities, which will be in many respects, and perhaps in most respects, be

superior to ourselves? The answer is not obvious. On the one hand, it is by no means unknown for the inferior intellect to dominate the superior. Greek scholars were held as slaves by Roman farmers. In certain environments, a tiger can kill a man. And it is perhaps conceivable that a mind could be massive and brilliant, yet mild and submissive. On the other hand, there must remain an element of doubt. One suspects that, sooner or later, the greater mind will have its way.

It is clear that no rules, no restraints, no restrictions can be relied upon; and of course it matters not at all that the machine has no direct physical powers or access to weapons. The machine, if it is to function, must be allowed to communicate, and if it can communicate it can probably persuade, and that is all that is necessary.

To realize just how bad the situation could be, we need only reflect that we may not even know where our interests lie! The machine will know what is best for us, and what is best for itself, and what courses of action are appropriate for these respective goals; but we may know none of these things, and be forced

to rely on the machine!

The remedy, as hinted earlier, may lie in coupling a human brain to the machine, either permanently or occasionally. If the circuits can be integrated so that the machine is only an extension and enlargement of the man's mind, then the situation may be under control. This would also represent a new level of life for the man, an experience we can hardly imagine.

Finally, turning to the question of possible extraterrestrial life, we find a riddle of awesome proportions. Where is everybody? Since the known universe contains at least 100,000,000 galaxies, with each galaxy numbering from 100,000,000 to 100,000,000,000 or more stars, and since most of these are at least several billion years old, some scientists think life must have developed on a great many worlds, and that in fact intelligent life must exist right now on myriad alien worlds.

Yet it is not true that "science agrees" there must be intelligent life on many worlds; the consensus of science appears to be uncertainty. (57) There does seem to be fairly good evidence that many stars have planets, that many of these may be suitable for life as we know it, and that under suitable circumstances life will probably arise. But there seems to be a possibility

that most planets suitable for life have no land surface. More important, there seem to be no very securely based calculations to find the probability of intelligence developing from life, or civilization from intelligence. Therefore we must not be awed by the fact that the universe contains probably over 1,000,000,000,000,000,000,000 stars; the probability of civilization having developed in one of these systems could easily be much less than one in 1,000,000,000,000,000,000,000.

If civilizations are common, then civilizations in advance of ours should also be common - but in that case, why have there been no visitors? I know of no convincing explanation. The three most common suggestions are: (1) Time is too vast; all our neighbors are either far behind us or far ahead of us in development, and in either case cannot be expected to traffic with us; (2) Space is too vast, and because of the limiting velocity of light, and perhaps unknown dangers, interstellar travel is forever impractical; (3) "They" exist, and know about us, but just don't give a damn, or are watching but not interfering.

All three suggestions seem implausible in light of our own psychology and prospects. As we indicated in Chapter VII, the Golden Age will bring essentially unlimited wealth, with matter and energy freely available, and organization, in the form of thinking machines, also virtually unlimited. Then surely we will either scout the universe ourselves, or send out drone vehicles to investigate and report. If we find life, we will monitor it and take over its guidance and development, either out of charity or wariness. We will not allow fellow creatures to stumble on in misery, or develop into threats. The size of the universe means nothing; we have all the stars to tap for matter and energy, and our thinking machines can propagate themselves to any necessary number.

Certain dark suggestions have been made about the fate of man, and of those others who have failed to visit us. Perhaps civilizations that reach a high technological level always destroy themselves. Perhaps the fundamental problems of philosophy have no solution, and the final reward of progress is only the fullness of the realization that nothing matters; after the fruit ripens, the next stage may not be super-ripeness, but rot. But such pessimistic thoughts as these are premature, to say the least. For the present, let us

simply acknowledge that the mystery remains a mystery, and also that we may, in fact, be ourselves the universe's elder race.

In any case, we gaze at the night sky and see the stars like dust, and reflect: either we are all alone in this vast universe, or else somewhere out there are other thinking beings, whom we may one day meet. Either way, it gives one pause.

Some Near-term Developments

Even the richest men of earlier times lacked many of the things available to the ordinary American and European today. These include: fast communication, fast travel, relatively reliable justice, accessible information, reliable emergency services such as fire and police departments, efficient plumbing, weather forecasts, insurance policies, loans on reasonable terms, dentistry, air conditioning, out of season foods, eyeglasses, anesthesia, and many other kinds of medical services and medicines. Certainly happiness is not directly proportional to wealth, comfort, safety, and peace of mind, but there is nevertheless a correlation.

Likewise we today are virtual paupers, compared to what we will be as resuscitees. Many extremely important goods, services, and modes of living will be available that do not exist today; some of these have already been indicated.

In addition to the qualitatively new things, there will soon be much available which requires essentially no technological advances or breakthroughs whatever - which requires, in fact, nothing except more work, more production, more automation, more wealth, of a kind that already exists, and ordinary progress.

Cities may be weather-controlled, if neces-

sary by covering the streets with retractable roofs; the air and the streets will be kept clean and sanitary. A half-inch of snow will not tie up traffic. Hay fever and other allergy victims will have relief.

Safety and law enforcement in cities may be greatly improved in several ways. Public places may be monitored by recorded television, to speed assistance and to preserve evidence. (For example, all vehicular traffic may be continuously filmed, unless the legislatures decide the infringement of privacy is an overriding consideration.) Homes and even individuals may carry small emergency signal units, which could summon ambulances, firemen, police, tow-trucks, freezer technicians, etc. This might be combined with wrist radios, in the manner of Dick Tracy.

Honesty in private and public employment may be promoted by the use of periodic routine lie detector tests, covering prescribed areas, to ensure that trust has not been violated, as a condition of employment. Nothing helps morality so much as removing temptation. Of course, the legislatures may decide that this is akin to forcing a man to testify against himself, and disallow it, especially since it might be required of the legislators as well.

Full-coverage liability insurance may be available and compulsory, so that everyone will be financially responsible, and collectible in case he commits any kind of wrong. Those whose records indicate they are poor risks will be insured by the state, but their activities may be restricted.

The Department of Health, Education and Welfare in the United States, and similar agencies elsewhere, may take increased responsibility for family life and training. At present, children are produced and raised usually by unskilled labor; little human beings are at the mercy of ignoramuses and brutes.

The children will probably not, except in extreme cases, be taken from the parents, since it seems generally agreed that even a good orphan asylum is worse than even a rather bad family. But heavy pressure will be exerted to force parents to educate themselves and qualify themselves as parents, and the children will be protected through some kind of routine inspection.

Justice will be more uniform, more reliable, and cheaper. The absurd system of punishment typified by "thirty dollars or thirty days" will be discarded. Jail may be used only for people who are physically dangerous, or who may do irreparable damage, and not for those guilty of crimes strictly against property or of technical offenses such as violation of the anti-trust laws. Offenses in the latter category may be dealt with by fines linked to ability to pay, with credit given if necessary, and by supervised probation or restriction of activities. The rules of evidence will be drastically revised and modernized to allow a more logical evaluation of probabilities. The "reasonable doubt" rule may be replaced by a formula based on percentage probabilities.

Our republic could be transformed into a democracy, or perhaps a weighted democracy, through electronics. Every home might have a voting machine attachment built into its TV set, capable of identifying citizens by their fingerprints or retinal patterns or what-not, and able to record and transmit votes. With the awkward machinery of voting thus streamlined, it might become practical to submit every important issue to referendum.

Conceivably, the machine might first test the voter, and allow him to vote only if he proves he understands the issue reasonably well. It is also possible, as previously hinted, that the one-man-one-vote rule may be modified, giving a man instead a variable number of votes, depending on such things as his knowledge and the degree to which the issue affects him. (Admittedly, such notions would raise complex problems - but so did the replacement of buggies by autos, and so do most advances. The problems must be met and solved, and not dodged.)

Transcontinental supersonic subways, with fares low relative to average income, will allow everyone holidays and vacations in the mountains, forest reserves, or on either shore. In town, similar systems will fractionate commuting time.

The dull and unpleasant jobs will either be eliminated by automation, or compensated by shorter hours or higher pay. It is even possible that before very long all citizens will be allowed a basic income just for breathing, although jobs would be available for the qualified and would provide additional income. Perhaps the one inescapable form of work, and the main duty of all citizens, will be participation in political processes.

Those who find the mid-twentieth century a little lacking may well take heart. We have hardly begun to live.

NEXT ISSUE:

Chapter XI: The Freezer-Centered Society

